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03 a printed circuit board inserted into the receptacle of the female connecting device, the printed circuit board having said second conductors engageable with the first conductors of the flexible circuit.--

REMARKS

Reconsideration and allowance of the application are respectfully requested.

In the Office Action of October 22, 2002, claims 1-24 were pending in the application. Claims 10-15 were allowed. Claims 7 and 22 were indicated as being allowable but were objected to as depending from a rejected base claim. Claims 1-6, 8, 9, 16-21, 23 and 24 were rejected under either 35 U.S.C. §102(b) or §103(a). Those rejections, as they might apply to the claims as now amended, are respectfully traversed.

First of all, regarding allowable dependent claims 7 and 22, Applicants are confused. Specifically, in the first Office Action of July 12, 2001, the Examiner indicated that dependent 6 and 21 were allowable if rewritten in independent form. In the second Office Action of December 18, 2001, the Examiner repeated the allowability of dependent claims 6 and 21. In the third Office Action of April 15, 2002, the Examiner stated that dependent claims 6-7 and 21 were allowable if rewritten in independent form. In the last Office Action of October 22, 2002, the Examiner stated that dependent claims 7 and 22 were allowable if rewritten in independent form. Although the Examiner started out allowing dependent claims 6 and 21, the Examiner ended up allowing dependent claims 7 and 22. It is respectfully submitted that each of dependent claims 6, 7, 21 and 22 should be allowable in view of all of the cited prior art. In particular, dependent claims 6 and 21 are directed to the spring means which is included in allowed independent claim 10. In addition, dependent claims 7 and 22 are directed to a printed circuit board in combination with the connector assembly of the parent claims. In other words, two flat circuits (a flat flexible circuit and a printed circuit board) are mated in the specific structural arrangement of the independent claims. This specific combination is not shown in the cited references. Consequently, dependent claims 6, 7, 21 and 22 have been rewritten in independent form as new claims 25-28 which now are believed to be allowable.

Claims 1, 6, 8, 16, 21 and 23 were rejected under 35 U.S.C. §102(b) as being anticipated by Johnson et al 5,297,968. Those rejections are respectfully traversed, as they might apply to the claims as now amended.

Regarding independent claim 1, Applicants pointed out in the Remarks of Amendment "C" that the adapter of the present application provides two different openings for receiving either of two different types of second conductor groups from two different

directions. The Examiner now takes the position that hole 20 in the bottom of housing 12 has first and second "openings" at the top and bottom thereof as the Examiner marks up the attachment to the Office Action of October 22. This appears to be a retrospective dissection of a reference. Johnson does not teach that hole 20 provides two openings. Johnson specifically teaches that housing 12 is SECURED to a printed circuit board 17 by fasteners 18. (See column 3, lines 61-63, along with Figure 2.) Hole 20 cannot be open as states by the Examiner when it is closed by a printed circuit board, as specifically taught by Johnson. The Examiner's explanation of the reference appears to be totally opposite to what the reference teaches.

The Examiner once again is invited to read the claims. Claim 1 calls for a connector assembly for removably interconnecting first conductors of a flat circuit to a plurality of second conductors. This language has been in the claims since the original application was filed. It is not understood how the Examiner expects the second conductors to be removably interconnected through the bottom of hole 20 in housing 12 of Johnson when that hole is closed and secured in closed condition by printed circuit board 17.

Nevertheless, independent claim 1 has been amended to call for the first receptacle in the adapter to removably receive the male connector. The first and second openings now are recited for removably receiving the second conductors. Still further, the claim has been amended to call for the first and second openings to be remote from each other and at different orientations for receiving the second conductors in two different directions. This structural combination is not shown in nor remotely suggested by the Johnson reference taken individually or in any combination with any of the other prior art cited by the Examiner, under either 35 U.S.C. §102(b) or §103(a). Claim 1 as now amended, along with dependent claims 2-5, 8 and 9, clearly is patentable and should be allowed.

Independent claim 16 also was rejected under 35 U.S.C. §102(b) as being anticipated by Johnson. This claim has been amended to call for an opening in the female connecting device communicating the receptacle with the outside of the device and remaining open for removably positioning the second conductors from exteriorly of the device in engagement with the first conductors in the receptacle of the female connecting device. As pointed out above, this is opposite the Johnson reference where hole 20 is closed and secured in closed condition by printed circuit board 17. Johnson does show a female connecting device 12 having a receptacle for receiving male connecting device 11. However, hole 20 in female housing 12 of Johnson does not communicate the receptacle with the outside of the device and remain open for removably positioning the second conductors from exteriorly of the device. Once male connector 11 of Johnson is mated within the receptacle of female housing


12, the receptacle is closed. Hole 20 is closed by printed circuit board 17. There is no way that second conductors can be removably positioned anywhere in Johnson from exteriorly of the device in engagement with the first conductors. The Examiner cannot change the teachings of Johnson to arrive at a desired interpretation of the Johnson connector system in order to support the otherwise unwarranted rejection of these amended claims. Clearly, independent claim 16, along with dependent claims 17-20, 23 and 24, are patentable over Johnson under either 35 U.S.C. §102(b) or §103(a).

In view of the foregoing, reconsideration of the application, allowance of claims 1-5, 8-9, 16-20 and 23-28, and passing the application to issue are respectfully requested.

Respectfully submitted,

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Version of Amended Claims Showing the Changes Made

IN THE CLAIMS:

1. (Twice Amended) A connector assembly for removably interconnecting first conductors of a flat flexible circuit to a plurality of second conductors without the use of conductive terminals, comprising:

a male connector including a relatively rigid male body member having an edge about which the flexible circuit is wrapped with the first conductors of the circuit facing away from the body member at the end thereof; and

an adapter including a first receptacle for removably receiving the male connector inserted edge-first into the first receptacle, and a second receptacle having first and second openings remote from each other and at different orientations for removably receiving the second conductors in [position] two different directions for engaging the first conductors of the flexible circuit at the edge of the male body member.

16. (Amended) A connector assembly for interconnecting first conductors of a flat flexible circuit to a plurality of second conductors without the use of conductive terminals, comprising:

a male connector including a relatively rigid male body member having an edge about which the flexible circuit is wrapped with the first conductors of the circuit facing away from the body member at the edge thereof; and

a female connecting device including a receptacle for receiving the male connector inserted into the receptacle, and [means on] an opening in the device communicating the receptacle with the outside of the device and remaining open for removably positioning said second conductors from exteriorly of the device in engagement with the first conductors of the flexible circuit at the edge of the male body member.